

Claims

1. A soft serve food product manufacturing, storage, and dispensing machine, comprising:
 - a source of soft serve food product;
 - 5 a closed loop circulation system connected to the source of soft serve food product; and
 - a dispensing head connected to the closed loop circulation system.
2. The storage and dispensing machine of claim 1, further comprising:
 - a clean in place system connected to the closed loop circulation system.
- 10 3. The storage and dispensing machine of claim 1, further comprising:
 - a mixing barrel assembly in the closed loop circulation system.
4. The storage and dispensing machine of claim 3, in which the mixing barrel assembly comprises a plurality of cylindrical mixing barrels connected in series.
5. The storage and dispensing machine of claim 4, in which the mixing barrels define 15 a serpentine path in the closed loop circulation system.
6. The storage and dispensing machine of claim 1, further comprising:
 - a housing enclosing the source of soft serve food product, the closed loop circulation system, and the dispensing head; and
 - a refrigeration unit in the housing for cooling the closed loop circulation system.
- 20 7. The storage and dispensing machine of claim 4, in which each mixing barrel has a first end and a second end, an inlet connected to the first end, and an outlet connected to the second end; and
- 25 in which each mixing barrel contains a rotatable whipping assembly extending from the first end to the second end of the mixing barrel, the whipping assembly comprising first and second end pieces supporting a plurality of longitudinally extending rods connected between the end pieces, each rod being radially displaced from the axis of rotation of the whipping assembly.
8. The storage and dispensing machine of claim 1, in which the closed loop circulation system comprises:
 - 30 a pump;
 - a mixing barrel assembly having an input connected to the output of the pump; and
 - a dispensing valve assembly in series with an output of the mixing barrel assembly for delivery of soft serve food product from the closed loop circulation system to the dispensing head, the valve being connected to the input of the pump.

9. The machine of claim 1, further comprising a refrigerated compartment enclosing the closed loop circulation system.

10. The machine of claim 1, further comprising a freezing barrel in the closed loop circulation system.

5 11. The machine of claim 2, further comprising a refrigerated compartment enclosing the closed loop circulation system and an unrefrigerated compartment enclosing the clean in place system.